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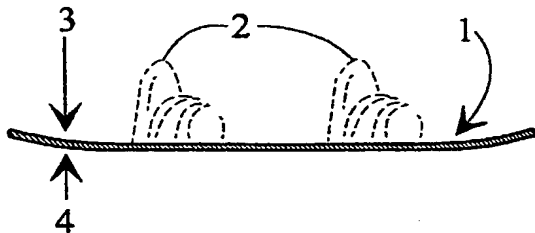
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(54) Title: METHOD FOR ACQUIRING A CERTAIN PRODUCT THROUGH THE INTERNET



(57) Abstract: The invention relates to a method for acquiring any of the products in the following groups (a-f) through the Internet, the product groups comprising among other things: a) sports equipment like: snowboards, surfboards, windsurfers including sails, skateboards, skis, sportswear, such as T-shirts, cloths caps, tricot caps, tracksuits, shorts, towels, etc, lifejackets, floating jackets, decorative patterns for guns such as shotguns; b) giftware and advertising articles such as: pens, erasers, rules, calculators, pen casings, etc., cigarette lighters, candles, candle lanterns, candlesticks, briefcases, bags, pocket flasks, shakers, decanters, bottle openers, key holders; c) lamps such as: table lamps, wall lamps, ceiling lamps,

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spotlights, hand lamps, outdoor lamps, such as streetlights, garden lamps and park ground lights; d) clocks such as: wristwatches, pocket watches, alarms and other table clocks, wall clocks, stopwatches, pulse meters; e) tableware and related utensils such as: forks and knives, spoons, corkscrews, cheese slicers, knife grinders, scissors, chopping boards, bases for kettles, glasses and bottles, trays, pans, casseroles, bowls, metal and ceramic containers and jars; f) musical instruments such as: guitars, drums, amplifiers and loudspeaker cabinets. The customer contacts personally the Internet program of a company manufacturing any of the products mentioned above, and designs the appearance, picks the materials and the colours, the sizes, etc, and feeds the dimensions and the number of products over his computer into the program, and subsequently the customer transmits the data on the products he/she has designed to the manufacturing company's file, i.e. order service, the manufacturing company's program chooses the suitable manufacturing methods and work steps for achieving the dimensions, aspects and surface patterns of the products, and the company stores or transmits the finished products designed by the customer to the latter.

Method for acquiring a certain product through the Internet

This invention relates to a method for acquiring any of the products in the following groups a)-f) through the Internet, the product groups comprising among other things:

- 5 a) sports equipment like
 - snowboards
 - surfboards
 - windsurfers including sails
 - 10 - skateboards
 - skis
 - sportswear, such as T-shirts, cloth caps, caps, tracksuits, shorts, towels, etc.
 - lifejackets
 - floating jackets,
 - 15 - decorative patterns for guns such as shotguns
- b) giftware and advertising articles such as:
 - pens, erasers, rules, calculators, pen casings, etc.
 - cigarette lighters
 - candles, candle lanterns, candlesticks
 - 20 - briefcases, bags
 - pocket flasks, shakers, decanters
 - bottle openers
 - key holders
- c) lamps such as
 - 25 - table lamps, wall lamps, pendants
 - spotlights
 - hand lamps
 - outdoor lamps, such as streetlights, garden lamps and park ground lights
- d) clocks such as:
 - 30 - wristwatches, pocket watches
 - alarms and other table clocks
 - wall clocks
 - stopwatches
 - pulse meters

- e) tableware and related utensils such as
- forks and knives
 - spoons
 - corkscrews
 - 5 - cheese slicers
 - knife grinders
 - scissors
 - chopping boards, bases for kettles, glasses and bottles, trays
 - pans, casseroles, bowls
 - 10 - metal and ceramic containers and jars
- f) musical instruments such as
- guitars
 - drums
 - amplifiers and loudspeaker cabinets
- 15 Using methods known *per se* for ordering various products through the Internet, one has to choose the desired products from a determined range. Thus, for instance, ordering programs relating to sports equipment or giftware comprise only known finished products. Corresponding products can also be found in various product catalogues.
- 20 The object of the present invention is to provide a new method by which the customer can design products relating for instance to sports equipment or giftware. The method in accordance with the invention is characterised by the fact that the customer contacts personally the Internet program of a company manufacturing any of the products mentioned above, and designs the appearance, picks the materials and
- 25 the colours, sizes, etc., and feeds the dimensions and the number of products over his computer into the program, and subsequently the customer transmits the data on the products he/she has designed to the manufacturing company's file, i.e. order service, the manufacturing company's program chooses the suitable manufacturing methods and work steps for achieving the dimensions, aspects and surface patterns
- 30 of the products, and the company stores or transmits the finished products designed by the customer to the latter.
- The method is simply based on the fact that the program, which has been created for digital control of predetermined work processes, is at the same time the program by which the products required can be designed, the design being consequently performed
- 35 by the customer.

This means that all of the work steps can be created by digital means, i.e. a digital signal can be converted into the desired end product under control.

Using a processor and a program, say, a surface pattern can be transformed into DC current or a pulse, or pneumatics can be controlled so as to allow the surface pattern and dimensions designed by the customer to be carried out e.g. by laser cutting or
5 e.g. glazing, when the product has been appropriately placed at the "work site", i.e. the 0 point of the product and the 0 point of the digital file matching in the xyz system of coordinates.

Hence the method is completely novel: the customer/user himself contacts the
10 manufacturing company's file, i.e. website using his own PC.

The customer acquires the program freely from the website, and this enables him to design his products in digital form on his own computer.

When the customer has carried out a work on his computer that he accepts, in other words, the products are such as he wishes them to be, he returns the pictures to the
15 manufacturing company's file and the manufacture can start immediately.

The program created for this method is compatible both regarding production and design, and the customer's design work and the production control are performed with one and the same program, in which data are transferred through the Internet in digital form between the customer and the manufacturer.

20 The program has been conceived so as to allow merely such products that are possible to manufacture, i.e. it has first been decided which product is manufactured from which material and how the manufacture, i.e. production method (process) is performed. In this manner, the program will allow the design only of a product that can be manufactured in the production process.

25 Since all the operations take place in digital form, i.e. the design, the transfer through the Internet, the program and the finished design work, the production, i.e. production control, the finished product will always represent the one the customer has ordered by 100%.

Various embodiments of the invention are described in the dependent claims of the
30 set of claims.

Since the product segment is larger and the geometry of the part products can be influenced, it is reasonable to create the program package sent to the customer such

that it can be fragmented into "sub-programs", modems, with each program segment comprising one product or reprocessing method or similar. Of course, the customer may take the entire package, yet it may be easier to take the segment needed each time. Otherwise the program itself may become heavy. In addition, one does not
5 know in advance whether the customer is going to design e.g. one single key holder or say, an entire larger object, such as a tableware set.

The customer may take the program in its totality or part of it, whatever he finds suitable, or he may use an active direct Internet line. For large and complex jobs, for which the customer's own PC does not have sufficient capacity, it is also conceivable
10 able that a registered customer does only part of the work himself, gives instructions to the manufacturing company or any external party, and receives the finished work, but still all these operations appear under the heading "customer".

The program of the method sets limits for and gives freedom to the customer. Without a special authorisation, the customer cannot influence the "technical quality",
15 i.e. technical design, construction or similar of the product.

In other words, a "construction (ccp) checking program" has been incorporated in the program in order to ensure that the finished work meets the quality requirements. The program also makes enquiry about the purpose of use and the country, should this not have appeared during the first contact. At any rate, the program has
20 been created such that the ccp always takes care that no deficient product can be ordered without special authorisation. The ccp also reports this to the customer and suggests a correction.

The program has also been conceived so as to indicate the wear resistance of the material and any essential information that the customer should and has the right to
25 know.

The program can, of course, be programmed so as to permit the creation only material thickness and constructions that are above specific minimum limits.

The program also includes a ccp + state line, which implies official regulations and provisions under the Building Act, on a national level or covering the EU countries,
30 as desired.

Any product injurious to the health, which is hazardous to the customer or the environment, can easily be excluded so that the customer is even unable to create such a product.

Other program limitations always relate to the technical level and technical construction of the product, which the customer cannot thus influence without the permission of the manufacturing company, nor does he break rules in the case of a public commercial project.

- 5 In order to be able to use the program, the customer engages to observe the manufacturing company's rules regarding the issues above.

Hence the program has taken account of technical and legal aspects, and thus there will naturally be limitations, which are also set by the production techniques, however, taken as a whole, the customer will have full freedom for instance regarding
10 surfaces.

The segments of an "architectural view program" can also be included in the program, the segments comprising e.g. the product segment of that target area that is available worldwide.

- 15 The "passive" part can be infinitely expanded depending on the market situation, general interest etc.

The main program for the actual design has naturally been created so as to provide ease of use, in other words, the customer does not have to take a stand on the actual production technology and process, nor on technical solutions. The main program and the sub-programs give the user free hands for the design without his having to
20 understand different techniques.

As stated in daily newspapers, the user has access through the Internet to a program by means of which he can pick a product from a catalogue, yet the products are always in a ready-made form. The customer is not allowed to plan the product personally, but is confined to a choice of finished products. In this respect, the application
25 differs from other known programs.

The invention is described below with the aid of examples and with reference to the accompanying drawings, in which

- figures 1-10 show part of the products pertaining to product group a)
figures 11-23 show part of the products pertaining to product group b)
30 figures 24-31 show part of the products pertaining to product group c)
figure 32 shows part of the products pertaining to product group d)
figures 33-46 show part of the products pertaining to product group e) and

figures 47-49 show part of the products pertaining to product group f).

The production technology comprises the following methods:

Lamination

Lamination implies the bonding of two materials or surfaces for instance by gluing,
5 and this generally implies that both the parts are otherwise completed before being joined.

IM film

An IM film denotes the joining of two materials or surfaces in the plastic injection-moulding step, and thus the two materials, the film itself and the injection-moulding
10 component, are both made of plastic.

The IM film will be an integrated component of the product, which has usually been printed, metal-coated or prepared in some other way before deep drawing/dressing, moulding and the injection-moulding step (only plastic products).

Transfer film

15 In principle, a transfer film is identical to an IM film, except that the pictures are transferred to the desired product by means of the film, but the plastic film itself is removed. The picture to be transferred and the plastic film proper are separated by wax or any other release agent, which helps releasing the picture to be transferred from the plastic film. Heat is generally required in the treatment of a transfer film.

20 A. Coating methods

1. Silver plating (chemical metal coating, silver)
2. Vacuum evaporation (metal, gas, other substances)
3. Metal coating, chemical (glass + ceramics, fire combustion)
4. Electro-catalytic coating (only of metals)
- 25 5. Ceramic coating (= glazing, enamelling)
6. Patination (chemical process)

B. Production methods (always in 2-dimensional or 3-dimensional shape)

1. Laser working/engraving
2. Hologram production techniques (genuine + others)
- 30 3. Laser printer techniques

4. Colour/ink jet techniques
5. Silk-printing techniques
6. Air pressure/electrically operated injection techniques
7. Piezospraying techniques
- 5 8. Offset and other printing techniques
9. Mechanical facing/engraving
10. Laser or water cutting

C. Production methods (metal working)

1. Bevelling techniques
- 10 2. Punching/pressing techniques
3. Deep drawing/eccentric turning
4. Other metal working operations
5. Soldering, welding and other metal joining techniques
6. Press casting/free casting
- 15 7. Other conventional techniques

D. Production methods

1. Transfer film, only the picture is transferred
2. Injection-moulding film, the film is integrated with the product along with the picture
- 20 3. Lamination
4. Deep drawing/moulding (plastic)

E. Intermediate production steps

1. A process performed directly on the work piece
2. A process performed indirectly on the work piece, e.g. with the aid of a transfer
- 25 film.
3. A combination of the steps above.

Product group a)

A snowboard, figure 1

- 30 A member, e.g. a holder or binding 2 can be fastened to the upper surface of the snowboard 1. The texture or picture is placed on the upper surface 3, the lower surface 4, or even on both the surfaces.

Figures 2 and 3. The customer may freely place the pictures 5 he desires both on the upper surface 6 and the lower surface 7.

Figure 4. A typical construction/design of a ski (downhill, cross-country, single) or a skateboard.

- 5 Usually a sandwich construction has been used, e.g. veneer or a cellular construction or an injection-moulded product, i.e. plastic, area 2. The actual body 2 is not designed, but only the visible surfaces, of which the upper outer surface 1 and the lower outer surface 3 can be designed.

10 The outer surfaces 1 and 3 shown are separate parts, which form the visible outer surface of the product. The outer surfaces may be made of metal, plastic, (wood-based) veneer or any other material, e.g. glass fibre or other laminates.

Depending on the product designed by the customer, the program chooses one or more of production techniques A, B, C, D or E, thus achieving the desired end product.

15 **Example**

The customer chooses the type of snowboard or creates the 3-dimensional shapes himself. The actual body 2, figure 4, is made e.g. of veneer. The customer wants to have pictures 5, figures 2 and 3, on both sides 6 and 7 of the snowboard (figures 1, 3 and 4).

- 20 The outer surfaces 1 and 3, figure 4, may be made of different materials, because the surface 3 facing the ground must be extremely wear-resistant, being made e.g. of glass fibre laminate, whereas the upper outer surface 1, figure 4, 1, may be made e.g. of transparent plastic. The outer surface 3 may naturally be made of metal or plastic. In the exemplified case, the outer surfaces are made of different materials
25 and the processing methods are different.

30 The upper outer surface 6 in figure 2 (figure 10). The customer has designed the surface, for which he wants e.g. a glossy and reflective bottom area of chromium metal, with 4-coloured pictures 5 placed on this. Then the program chooses a transparent plastic film, e.g. polyamide with a 0.33 mm thickness, which is coated with a shiny chrome surface, and among the production techniques it chooses coating methods A, either silver coating; silver nitrate, which reacts with a reducing agent, so that the silver solution is precipitated on the film surface, or the vacuum evapora-

tion method, by means of which e.g. chromium, zinc, silver or aluminium is applied on the surface of the plastic film (in figure 4 on the inner surface 5 of the outer surface).

After this the desired picture can be produced, figure 4, on the outer side 4 of the upper surface 1 by any of the production methods B 2-8, e.g. with laser printing technique 3. Then the printed and metal-coated film can be cut to shape. e.g. production methods B, 9 or 10. Since (figure 4) the lower surface 3 will be exposed to heavy wear, the program recommends e.g. glass fibre laminate or wear-resistant plastic (both being transparent), and then the printing takes place with production methods B, 7, with the piezospray connected and placed either on the robot or x-y-line. If metal is used, figure 4, as the surface of the bottom 3, the picture can be produced with production methods B, 1, laser working/engraving of stainless steel. The exemplified cases can be freely redesigned (with production techniques a, B, C, D and E). All that has been said above also applies directly to skis (downhill, cross-country, single skis), and also for instance to water skis and a skateboard equipped with additional wheels 5, figure 6.

Windsurfers and surfboards

A windsurfer, figure 7, consists of the actual board 1, a mast and a horizontal holder 5 and a sail 7. In principle, the board of the windsurfer, figure 7, has the same design as that of a surfboard, and thus the construction of a surfboard will not be separately defined below, since the design appears from that of the windsurfer.

The typical construction of the board is shown in figure 9, in which two shell parts 6 and 7 made of plastic have been joined generally by gluing their joint 8, and the inner part 12 has typically been filled with polyurethane or expanded polystyrene, which are light materials acting as a float. The sail 7 can be designed as follows e.g. with the program. The dimensioning, the shape, the openings 6 and the pattern can be carried out with production methods B, 2-8, intermediate production methods E and/or production methods D using transfer film 1. Another option is cutting parts of some other plastic (of which the sails are usually made), e.g. window 6 with production method B, laser or water cutting 10, and joining by appropriate means, e.g. gluing, stitching or ultrasonic welding. The customer may also influence the material and colour of the mast and the horizontal holder.

Figure 8 shows the pattern both in the upper part 2 and in the lower part 3, which can be carried out with production methods B, 2-8 and intermediate production methods E.

- 5 Figure 10 shows an enlarged portion of figure 9, where the pattern 6 and 7 can be carried out both on the outer surface 9 and the inner surface 10. If the inner surface is provided with a pattern, the material of the frame structure must be transparent. the pattern can also be provided with Injection-moulding film techniques if the product has been injection moulded.

Giftware and advertising products

- 10 Figure 17 shows as an example a plastic ballpoint pen, figure 18 a plastic rule and figure 20 a disposable plastic cigarette lighter.

The customer chooses the model, designs the aspects and places an order. If the customer wants a silvery surface with the desired picture or texture in 4 colours, the program chooses e.g. a silver surface, coating method A, vacuum evaporation
15 method 2, and then the picture is transferred to the product by means of the transfer film.

- Figure 17 shows a metal ballpoint pen and figure 21 a metal cigarette lighter. The customer picks the basic model and frame metal for the product, e.g. copper. The customer wants the main surfaces of the product to be coated with pure silver. The
20 program chooses e.g. coating method A, electro-catalytic coating 4, e.g. silver.

The customer wishes to have the pictures made of pure gold. In that case, the pictures can be formed with laser, increasing the material thickness at the picture, or a silver surface can be protected at locations where the picture is not desired, using e.g. wax or varnish. This is followed by coating method A, electro-catalytic process
25 4, so that the desired gold adheres only to the surfaces not coated with protective wax, forming the desired picture of gold.

The procedure can also be different, by first producing the coating of gold from which the pictures are formed, with coating method A, electro-catalytic coating 4, over the entire area 4 of the product, e.g. figure 21.

- 30 After this silver is coated on top using the same electro-catalytic method and then using production method B, laser facing/engraving 1, the silver is removed from the surface on which picture 2 is desired, figure 21.

The features mentioned above also apply to the products shown in figures 11-14 and 22, 23 and to the production techniques A, B, C, D and E above.

Bags and briefcases

5 The most commonly used materials in the manufacture of bags are plastic, metal and leather, or combinations of these.

The program can be used e.g. to influence both the outer surface of the bag and the inner space 12 of the bag, figure 16.

10 Figure 15 shows a bag 1, in which a separate area 2 has been formed surrounding the area 3, in which a picture has been formed. The handle 4 has been fastened with metal fasteners, and so has the lock, and the bag frame may also be made of metal.

Figure 16 shows the bag from the side and opened, the flat side 7 and the cover 8 and the cover side 9, such as the bottom 10, form generally straight surfaces, which are easy to design.

15 In this case, all the production techniques A, B, C, D and E mentioned above can be implemented. In other respects, the bag can be manufactured quite normally, regardless of the material.

Example 1

20 Figures 15 and 16 show a leather bag, in which area 2 is of different colour than area 3, in which a picture/pattern has been provided. Firstly, this allows the picture to be printed, as on leather in general, however, larger surfaces are not usually coloured (printed) afterwards, leather being normally coloured in one piece, which is subsequently cut in the desired shape.

25 Thus the leather in area 2 is e.g. brown, and the central area 3 is black, and a picture has been printed on the latter. The leather in area 2 is of different quality than that of area 3, and the areas have been connected at their joints by stitching or e.g. gluing. In addition, the customer wanted the handle 6, and also the lock parts, rivets, corner shields and border 5 made of metal. The customer chooses pure 24-carat gold. The program chooses coating technique A 4, i.e. an electro-catalytic process, and gold as the material. The leather can be mechanically cut, however, the laser or
30 water cutting 10 in production method B is more efficient.

The picture area 3 in figure 15 can also be formed e.g. using coating techniques B, laser facing/engraving 1, and in this case the colour is removed and a (coarse) suede surface is produced. This technique can also be applied before the basic colouring, so that e.g. the text or the picture are emphasised, even though the leather colour would be the same.

Example 2

The basic frame of a metal bag is e.g. aluminium or any other light metal, e.g. titanium. The customer designs the appearance of the bag e.g. as follows:

All the surfaces of the bag in figure 15 are e.g. made of aluminium, the customer's choice is a shiny black area 2 by picking ruthenium, a silvery area 3 and a golden picture in this.

First the entire areas 2 and 3 are coated with coating method A, electro-catalytic coating 4, ruthenium, and since the area 2 is meant to remain black, it is provided with a protective coating of wax or varnish, using e.g. production method B 10, which cuts a protective film to cover area 2, followed by waxing e.g. B, 6, by spraying and after the protective film has been removed the body can be immersed in an electro-catalytic basin, A 4, where gilding is performed. Now the area 3 is gilded, and when the same area has been provided with a silver surface, the article is removed from the basin.

After this, the picture/texture of area 3 in figure 15 must be formed, which is easily done with coating method B, laser working engraving 1, which scratches off the silver coating and makes the gold appear.

The same processes can, of course, be applied to all of the surfaces, references 7, 8, 9 and 10 in figure 16.

Example 3

The bag is made of injection-moulded plastic + IM film. As in the preceding examples, figure 15, the area 2 is dark and the central area 3 is light with a gilded texture/picture.

First, the IM film itself is wound up/transferred to be printed, e.g. to the laser printer unit 3 of production method B, where an IM film is printed which has exactly the appearance designed by the customer. In the following step, the printed IM film is deep drawn/conditioned to the appropriate shape, e.g. typically to the approximate

or definitive 3-dimensional size. Next the film is transferred into an injection-moulding mould, the mould is closed and the injection-moulding process can be started. At the end of e.g. 50 seconds, an article or part of an article has been obtained, e.g. a bag cover, provided with an IM film having the appearance designed by the customer fixed by injection moulding to the plastic part, and the product is finished.

Giftware and advertising articles, such as key holders and similar products

Figure 11 shows a key holder made e.g. of metal, for which the customer designs a 2-dimensional/3-dimensional shape, i.e. the aspects of the body. The production process is identical to the one used e.g. for a ballpoint pen made of metal.

Figure 12 shows a plastic key holder, for which an IM film production process is used.

Figure 13 shows a car key. The process is the same as in figure 12, with the exception that injection moulding is carried out in direct contact with the key body/shank, or is identical to that of figure 11, for instance.

Figure 14 illustrates an electric key, a magnetic tape, a chip, a punched card key or any similar key, identifier or ID card based on non-mechanical encoding.

Giftware and advertising articles such as candles, candle bases and candlesticks

It is known that the outer surface of candles and also the candle itself may be of any colour. The colour pigments and the actual dyes are known.

The customer designs the aspects of the candle. Under production techniques B, a suitable choice is e.g. colour/ink jet printing on a transfer film D, 1.

Lamps

Figure 24 shows ceiling lamps (figures 24A, 24B and 24C), figure 25 a ceiling lamp, figure 26 a pendant lamp with a fabric shade, and an etched floor and ceiling lamp.

The frame material of the ceiling lamp in figure 24 is transparent glass 1, for which the customer designs the appearance, e.g. figures 2, 3 and 4, designing the appearance 5 of the fixtures and the appearance of e.g. the frame 6.

In the most straightforward embodiment, quite ordinary UV or heat-setting printing colours can be used to achieve the pictures 2, 3, 4 and the frame 6, e.g. using production method D, transfer film 1, which may have been printed with production method B, 3-8, in any manner used in these, or directed to the work piece itself in method step E, 1.

If a high-quality product is desired, "glass staining colours", i.e. glazing should be used, which require combustion firing at a minimum temperature of + 350 °C, in other words typical ceramic coating agents.

In this case, the same production process as above can be used, but with colouring agents of different colours, cf. coating method A, ceramic coating 5.

As coating for the metal holder in figure 24, the customer may choose any metal, e.g. silver. Then the holder member 5 made of e.g. copper is coated by electro-catalytic means A 4.

The central part of the ceiling lamp in figure 25 is transparent 1 and its outer border is bright pressed glass 3, the parts being connected by a brass frame 2, which has been coated by electro-catalytic means.

The example above has been given to show that the customer may design various appearances with the same 3-dimensional shape, thus the customer may design the appearance including a central part 1 made of bright glass which has been subjected to acid treatment, and the outer border 3 in transparent blue, with the parts connected by a brass frame with a green enamel coating. There may be hundreds of variants without the printing shown in figure 24.

Figure 26 shows a ceiling lamp made of fabric (figures 26A and 26B), for which the customer has designed the external shape, the colour 1 and the pictures 2, 3.

Figure 27 shows a ceiling lamp in which patterns 3 have been provided on the glass 1 e.g. by chemical acid treatment, i.e. etching of the surface.

The patterns can also be achieved with production method B laser facing/engraving 1, or etching, tampon, silk-screen B, 5 and 8 or B, 4 and 7, with the equipment fastened to a robot arm. However, a transfer film may be the most advantageous means of performing etching of glass.

Lamps such as streetlights, outdoor, park ground and garden lights

Figures 29 and 30

The customer designs the appearance by choosing the ready-made basic components in e.g. groups A-F, dimensioning the lengths, choosing the lamp type and then
 5 proceeds with the reprocessing.

The customer picks the parts A, B, C, D and E he wants, e.g. black steel as the material, and then designs the appearance with the surface of parts A, B, C and D made of copper and part E, the actual lamp, made of gold, and the lampshade of greenish glass.

10 The program then picks the correct production process A, coating methods, electro-catalytic process 4, where bodies A-D are first brought into a production process applying e.g. zinc on the surface to avoid corrosion. Then the same production process is repeated to obtain a nickel layer, and after this a finishing copper surface is made with the same production process and finally using production method B
 15 laser working/engraving 1 the patterns designed by the customer are formed.

1. Choose or design the appearance of the lamp or the lamp post, model A, B, C, D, E and F.

2. Choose the raw material

- black steel/iron/cast iron
- 20 - acid resistant/stainless steel
- copper/brass/bronze
- aluminium
- any other metal or alloy

3. The program chooses and designs the surface

- 25 - electro-catalytic process, coating, copper, zinc, gold, silver, ruthenium etc.
- anodisation process on aluminium
- painting
- aquagraphics
- other

4. Choose and design the surface pattern

- laser

Clocks

There are various type of wristwatches, such as precious watches (of famous
5 brands) made with pure gold or other precious metals, and simple but yet sophisticated ones, such as Swatch, with a plethora of different wristbands and chains.

In the following the two extreme examples above will be described, a precious Rolex watch and a modern Swatch watch.

Example 1

10 A Rolex watch, figure 32, which the customer has designed e.g. as follows:

The actual watch body 1, made of steel, should be coated with 18-carat high gloss white gold. The program chooses the correct process for the white gold plating; for pre-treatment it chooses e.g. catalytic polishing, electro-catalytic nickel plating, electro-catalytic copper plating and finally electro-catalytic silver layering, cf. coat-
15 ing methods A, electro-catalytic coating 4. After this the finishing coating can be made, e.g. white gold plating, with the electro-catalytic method A, 4 mentioned above.

The customer designs the appearance of the button 2, e.g. with a reddish gilding or rhodium gold alloy. Then the process is the same as above, but with the finishing
20 treatment performed with a rhodium gold salt alloy, i.e. the final surface will be made of rhodium gold.

Next the customer himself designs the appearance of the wristband 3, e.g. with gold in the central part and platinum on the outer parts.

The frame 5 of the dial plate is usually a decorative part, which is connected to the
25 frame 1 together of e.g. the glass 9. The customer designs its appearance, e.g. in gold, and the process is the same as above.

The customer has also designed the aspects of e.g. the frame 1, the chain 3 and the frame 5 above such that they have pictures and texts made with silver.

The program makes the decisions on the basis of what the customer has designed,
30 without the customer having necessarily to know the technical processes and their

mutual order. In this context, it should be noted that there is a silver layer under the gold layer. This would not be necessary from a technical point of view, nor in terms of the appearance, however, as the customer had designed the appearance of the product definitively, with the pictures 4 made of silver, the program decided to place the silver layer under the final gold layer.

Consequently, the pictures designed by the customer can be provided in silver with high efficiency and quality using production methods B, laser working/engraving 1.

The uppermost gold layer is "scratched off" with laser at the necessary points so that the pictures of the appearance designed by the customer are formed, e.g. 4 text/name Rota, frame 5 first name e.g. Jerry.

In other words, the customer does not take a stand on the technical process nor on the decision-making, but designs the product appearance with the freedom and limitations prevailing within the scope of the program.

The customer may thus create a perfectly individual product exactly as he has designed it.

The rear of the watch frame can also be subject to the same operations, and what is more, its inner part as well. This means that stealing the article is not worth while, because it carries a person's identification data, and hardly anybody wants to use an object that has the pictures/data of somebody else.

Anything can also be engraved on the actual glass 9 with the use of laser.

Example 2

A watch of Swatch type, which may naturally be made of metal, as in example 1, but also entirely of plastic, also allows the customer to design any elements for it. In the exemplified case all the components have been made with the IM film technique.

This allows any surface, photographs, texts, metal surface, hologram, etc. to be made.

The customer designs the aspects and the program chooses the production techniques.

An IM film, for instance, can be printed with production methods B, e.g. laser printer technique 3, it can be deep drawn and conditioned into shape transferred into a mould, and the product can be injection-moulded.

5 In the same way, other products can also be designed, such as alarm clocks, wall clocks, stopwatches, pulse meters, electronic equipment, such as portable CD recorders, compasses, cameras and video cameras.

Cutlery

10 The production process for the tableware in figure 33, forks and knives, figure 33A, spoons, figure 33B and cheese slicer, figure 34, which are usually made of stainless steel or silver, is exactly the same as that of e.g. metal watches, except that these do not comprise glass, for instance.

15 The exemplified products 1 have a body of stainless steel and an end that is shiny black 2, with a decorative glossy area 3, including also a logo 4, a name and e.g. the name of a house 5, "House of". For the black area, the customer has designed the appearance, the pictures and chosen the ruthenium material.

20 The program chooses the production processes. First, the entire product is immersed in wax or varnish, and e.g. production methods B, laser removes/burns off the wax/varnish from the desired areas. In the electro-catalytic process, the coating adheres to the product in the areas from which the laser B, 1 has removed the protective wax/varnish by burning/engraving.

The laser may, of course, burn the patterns directly into the metal. The scissors and the kettles in figure 41 can be designed in the same way as the products above.

Tableware

25 The glass bowl in figure 43, e.g. a salad bowl, can be planned to be etched with various types of acids or other chemical substances. The method has been industrially used a chemical process for long. The customer designs the appearance of the product and the program chooses the production techniques.

30 Thus, for instance, the outer surface of the bowl 1 can first be protected with e.g. wax, varnish or any other protective agent, and then laser working/engraving removes this protective layer from the desired locations.

In the actual production process, the chemical reaction with glass takes place only in the areas not covered with a protective surface.

5 The process can also be carried out with a transfer film, either with the protective surface transferred from the film to the actual product, followed by the production process described above, or the active chemical substance can be applied on the outer surface of the product, or any combination of these two methods can be used. The transfer film is printed e.g. with production methods B, 3, 4, 7. Other "printing methods" can also be applied to the product itself, e.g. tampoone, silk-screen, piezospraying, which are placed in a robot, etc.

10 Guitars and musical instruments

The guitar 2, e.g. an electric guitar, in figure 47 has a wooden frame material and it is generally made of glued wood laths or boards to prevent deformation, or of MDF board or similar. Various plastic materials may also occur.

15 The program allows the 3-dimensional shape 1 of the guitar to be influenced, i.e. the shape and size can be freely chosen. After the basic frame proper has been formed, the final shape can easily be made by e.g. mechanical milling with a forming tool, using the file formed by the customer.

20 The customer chooses the type of and number 9 of microphones and designs the neck 6 and the string tensioners 7. The customer may freely form pictures 3, 4, 5 at the locations he desires. Also on the rear side 8 of the guitar, and also plan the position of the other parts, e.g. the sounding device 10.

The design of the parts above can be performed with coating methods A, 1 and 2, production methods B, 1 through 10, production methods D and intermediate production steps F.

25 Example 1

The customer wants a one-coloured guitar body 2 and chooses the colour he desires from the colour systems, or creates an individual colour shade, and then the coating takes place with production methods B, air pressure/electric spray 6.

30 If the customer wants pictures 3, 4 and 5, he may order separate pictures and glue them on his guitar (figure 47). If he wants better reflection, the body 2 must first be coated with basic varnish and then either coating method A 1 or 2 is chosen, which provides a highly light-reflective metal surface. The customer may select the colour

shade he wants, however, in this case in the form of varnish (or transparent colour) and with production method B, 6, to apply a coating on the entire body. The texture and the picture 3, 4 and 5 can also be coated e.g. with production method B, 6 and/or 7, intermediate step E, 1, e.g. with a robot or tools 6 and 7 fixed on the x,y line.

The pictures can be produced also by means of a transfer film.

Example 2

Since guitars are seldom made of injection-moulded plastic, an IM film is not usable in the real sense of this word, except when a binder adhering to the IM film has been mixed in a sufficient amount with the MDF material. Then an IM film can be used in the mould during the MDF compression step.

Most frequently, the body is milled to the desired shape and the coating process is performed only after this.

Example 3

The exemplified plastic film, on which the pictures and the texture have been provided, has been made by deep drawing or shaped as desired by some other means, and then laminated on the guitar body, e.g. by gluing. This allows all the production processes to be carried out with the film still being smooth, it allows the use of coating methods achieving very high contrast and colour reproduction, production method B, laser printer technique 3. This picture has been coated with a metal surface, with silver plating 1 or vacuum evaporation method 2.

Figure 48 illustrates a drum kit, for which the customer chooses the parts he wishes from the manufacturer he wishes.

The loudspeaker of figure 49 is a good example of a design product, for which the design and the choice of material through the Internet is very useful, since there are innumerable manufacturers of loudspeaker elements, bass 2, medium 3 and descant 4, locations for fastenings and screws and the perforations required in the front face of the housing 1 will vary in each case.

Thus the customer chooses personally the type of loudspeaker and the program reports e.g. the suitable band division filter and the minimum size to the housing. The customer designs the appearance of the loudspeaker housing or chooses a ready-made housing, chooses the loudspeakers and designs their aspects.

The benefit of the invention is that the manufacturer does not have to manufacture products kept in stock, since the manufacture does not start until the customer has placed an order.

5 Design and orders through the Internet provides a solution to the problems of logistics and storage, since the manufacture of the product is started only after the order has been made.

The Internet has been used in the examples given above, however, other known or future interfaces can obviously be used as well.

Claims

1. A method for acquiring any of the products in the following groups a)-f) through the Internet, the product groups comprising among other things:

- a) sports equipment like
 - 5 - snowboards
 - surfboards
 - windsurfers including sails
 - skateboards
 - skis
 - 10 - sportswear, such as T-shirts, cloth caps, tricot caps, tracksuits, shorts, towels, etc.
 - lifejackets
 - floating jackets,
 - decorative patterns for guns such as shotguns
- b) giftware and advertising articles such as:
 - 15 - pens, erasers, rules, calculators, pen casings, etc.
 - cigarette lighters
 - candles, candle lanterns, candlesticks
 - briefcases, bags
 - pocket flasks, shakers, decanters
 - 20 - bottle openers
 - key holders
- c) lamps such as
 - table lamps, wall lamps, ceiling lamps
 - spotlights
 - 25 - hand lamps
 - outdoor lamps, such as streetlights, garden lamps and park ground lights
- d) clocks such as:
 - wristwatches, pocket watches
 - alarms and other table clocks
 - 30 - wall clocks
 - stopwatches
 - pulse meters
- e) tableware and related utensils such as
 - forks and knives

- spoons
 - corkscrews
 - cheese slicers
 - knife grinders
 - 5 - scissors
 - chopping boards, bases for kettles, glasses and bottles, trays
 - pans, casseroles, bowls
 - metal and ceramic containers and jars
- f) musical instruments such as
- 10 - guitars
 - drums
 - amplifiers and loudspeaker cabinets

characterised in that the customer contacts personally the Internet program of a company manufacturing any of the products mentioned above, and designs the appearance, picks the materials and the colours, the sizes, etc., and feeds the dimensions and the number of products over his computer into the program, and subsequently the customer transmits the data on the products he/she has designed to the manufacturing company's file, i.e. order service, the manufacturing company's program chooses the suitable manufacturing methods and work steps for achieving the dimensions, aspects and surface patterns of the products, and the company stores or transmits the finished products designed by the customer to the latter.

2. A method as defined in claim 1, characterised in that the methods for coating the products comprise

- a) chemical metal coating, such as silver plating,
- 25 b) vacuum evaporation metal coating,
- c) chemical metal coating combined with glazing or ceramic coating and firing,
- d) ceramic coating.

3. A method as defined in claim 1 or 2, characterised in that the conditioning and coating of the products comprise the following methods:

- 30 a) laser facing/engraving,
- b) hologram production techniques,
- c) laser printer techniques,
- d) colour/ink jet techniques,
- e) silk-screen techniques,

- g) off-set and other known printing techniques,
 - h) mechanical milling/engraving and grinding,
 - i) laser and water cutting and
 - j) 2 or 3 axial worktop process using impact tools for stone products.
- 5 4. A method as defined in any of the preceding claims, characterised in that the design of the products and their production process in their totality are carried out in digital form.

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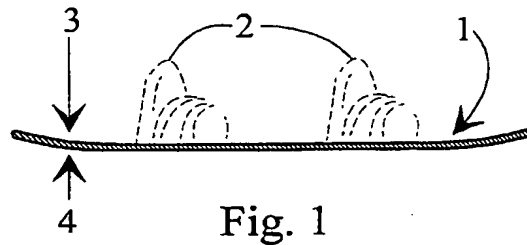


Fig. 1

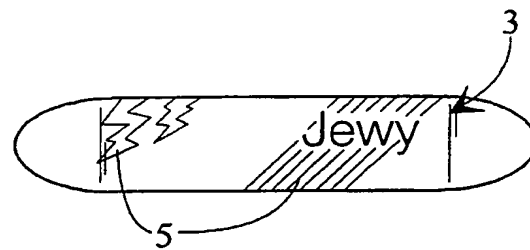


Fig. 2

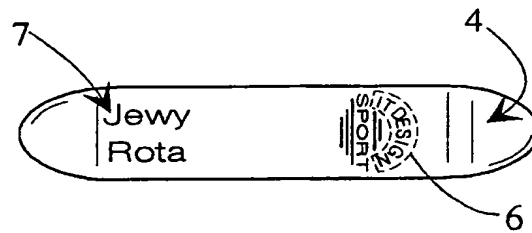


Fig. 3

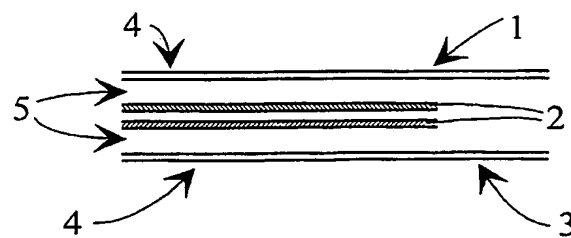


Fig. 4

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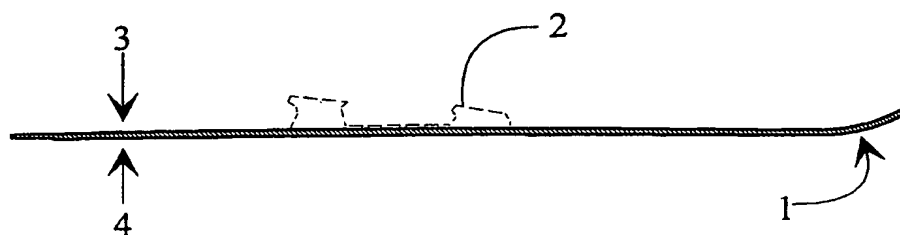


Fig. 5

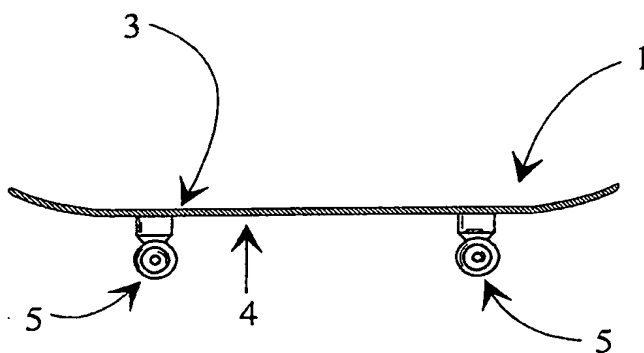


Fig. 6

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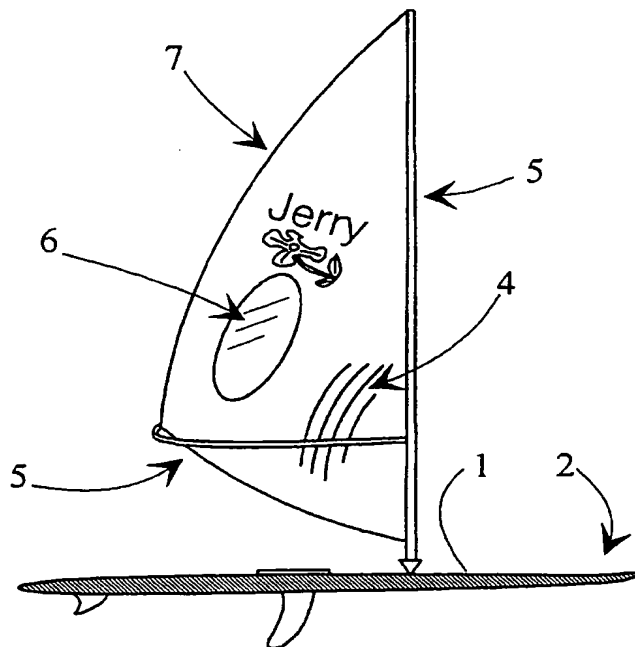


Fig. 7

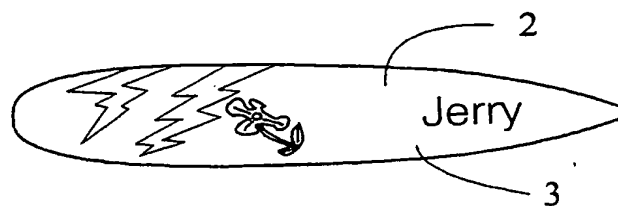


Fig. 8

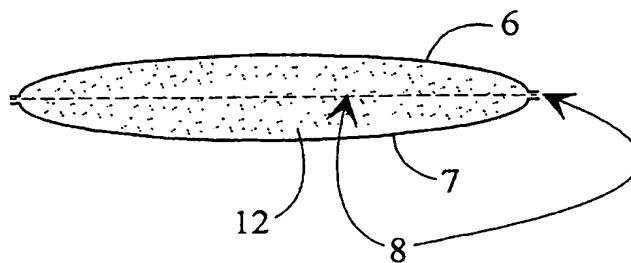


Fig. 9

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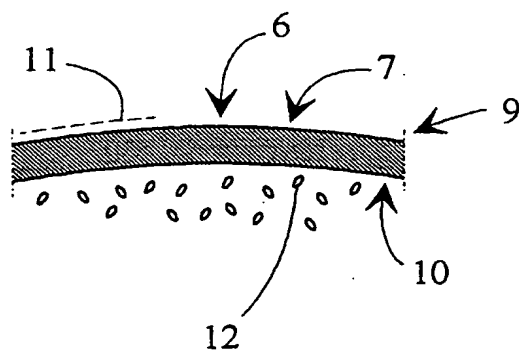


Fig. 10

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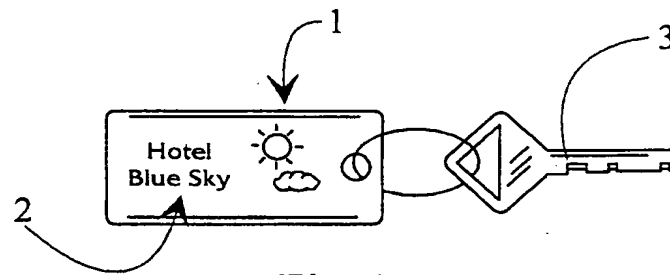


Fig. 11

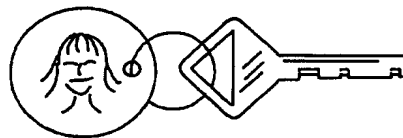


Fig. 12

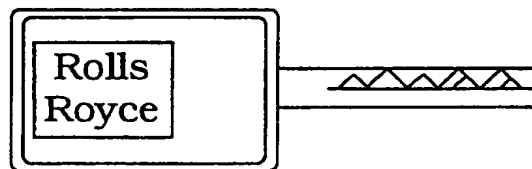


Fig. 13

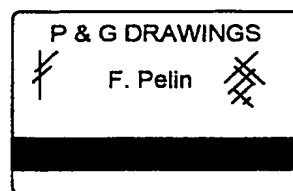


Fig. 14

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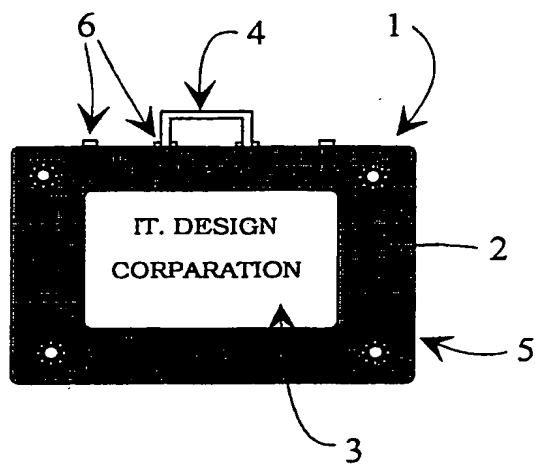


Fig. 15

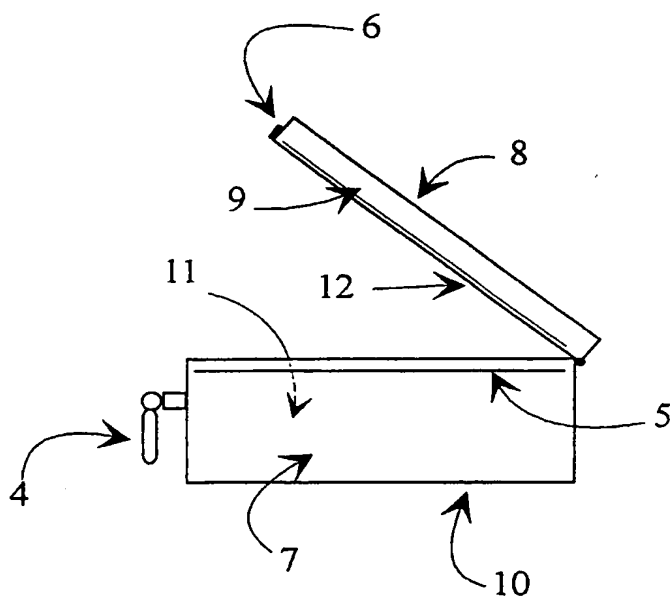


Fig. 16

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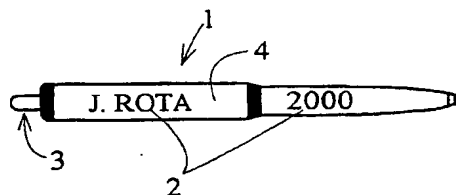


Fig. 17

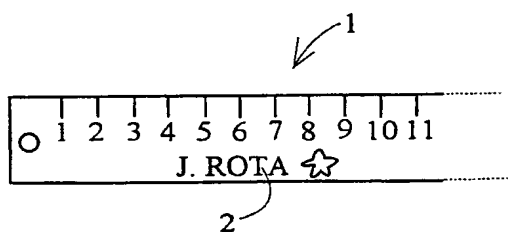


Fig. 18

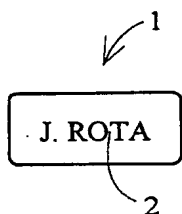


Fig. 19

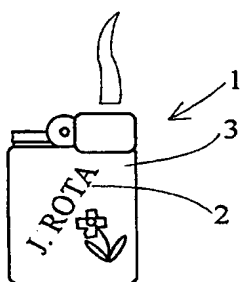


Fig. 20

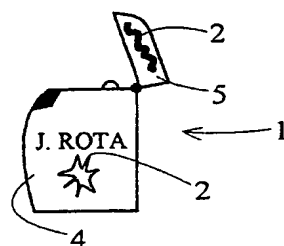


Fig. 21

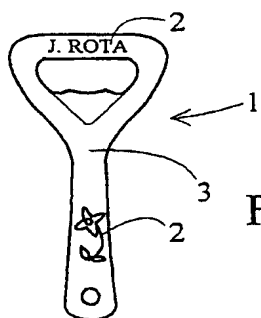


Fig. 22

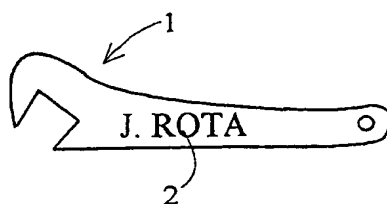


Fig. 23

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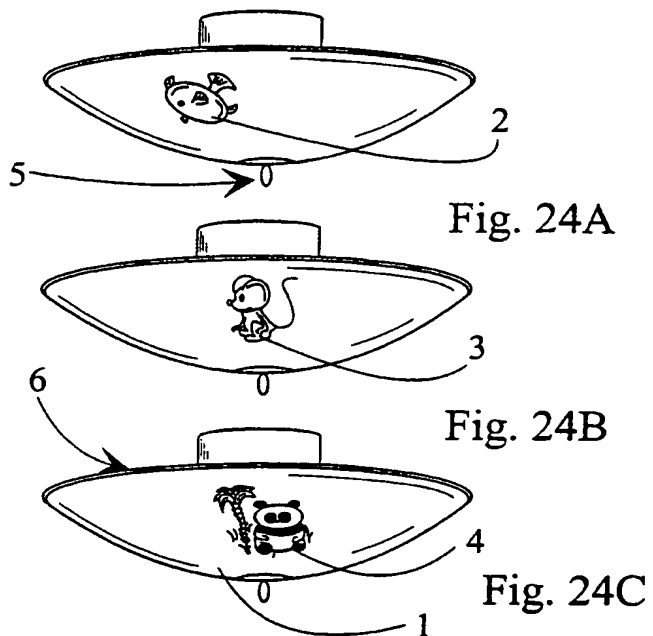


Fig. 24

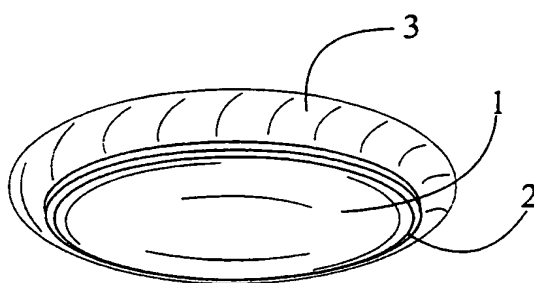


Fig. 25

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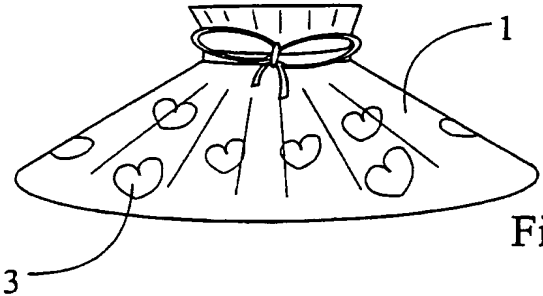


Fig. 26A

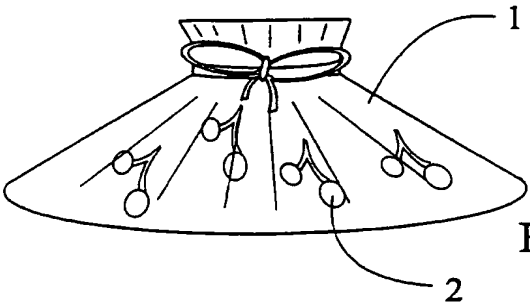


Fig. 26B

Fig. 26

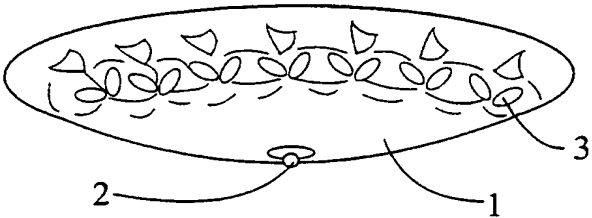


Fig. 27

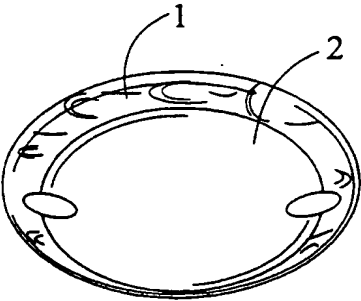


Fig. 28A

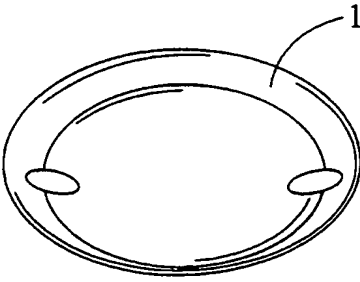


Fig. 28B

Fig. 28

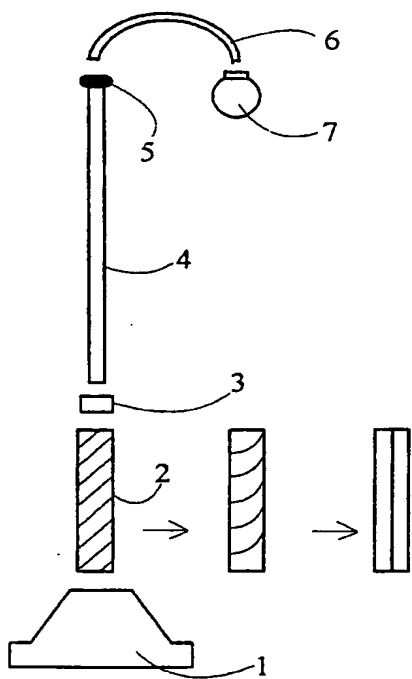


Fig. 29

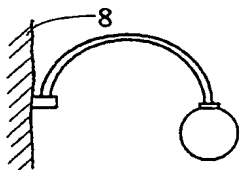


Fig. 30

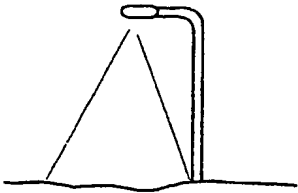


Fig. 31

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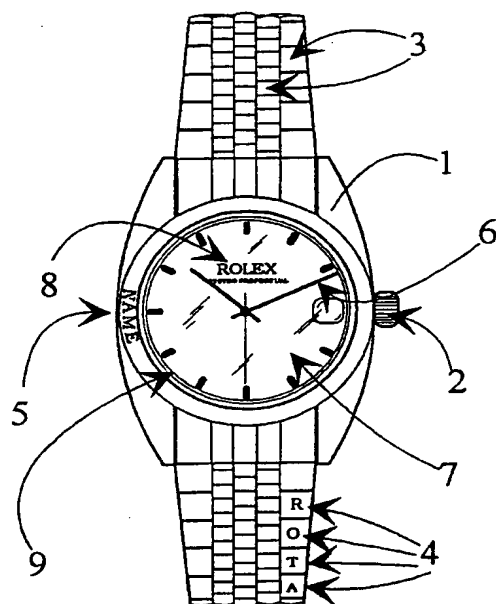


Fig. 32

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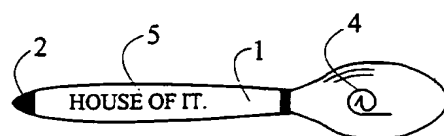


Fig. 33B

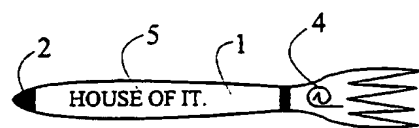


Fig. 33A

Fig. 33

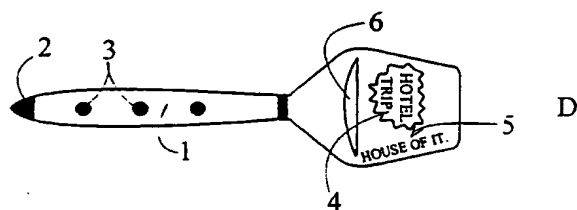


Fig. 34

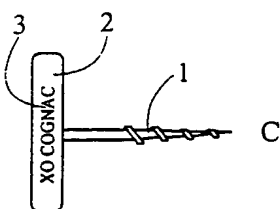


Fig. 35

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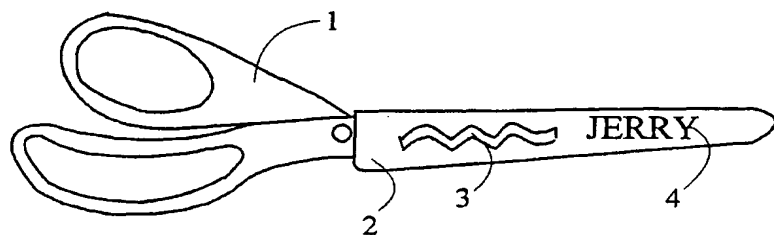


Fig. 36

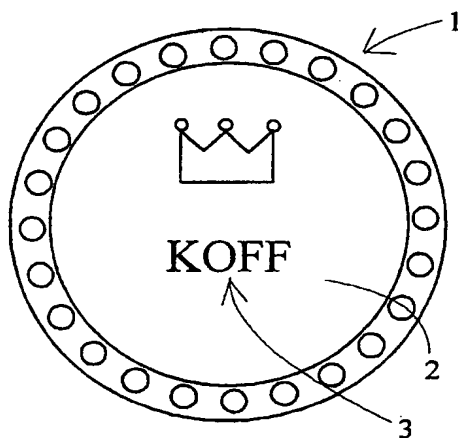


Fig. 37

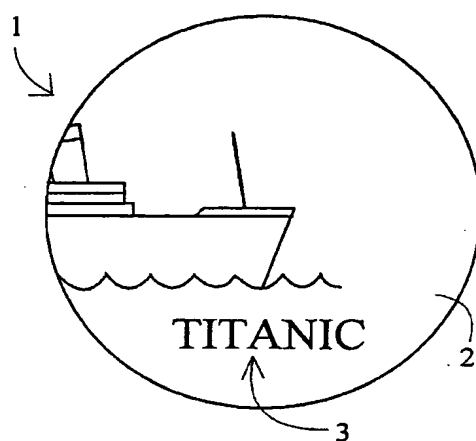


Fig. 38

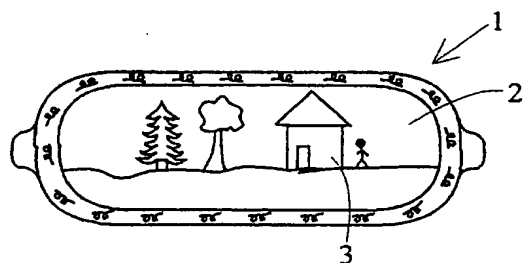


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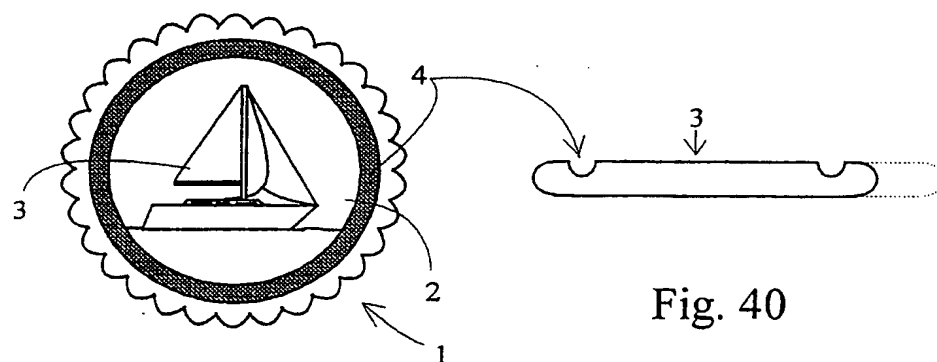


Fig. 40

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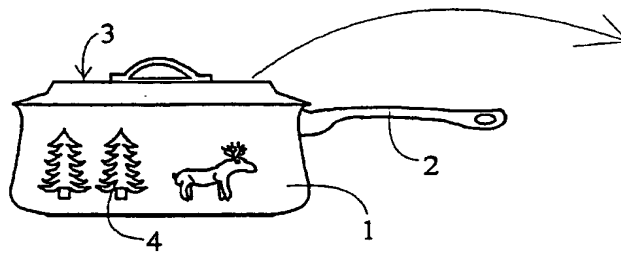


Fig. 41

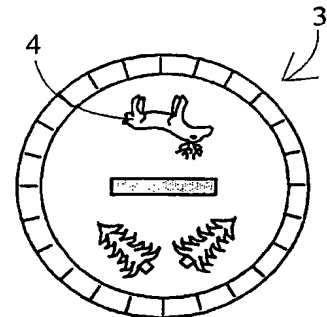


Fig. 42

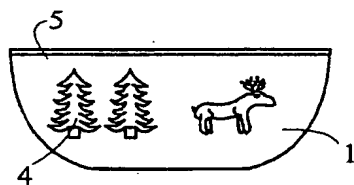


Fig. 43

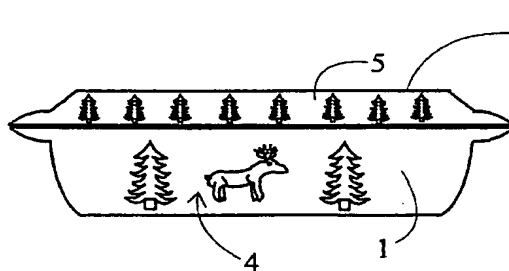


Fig. 44

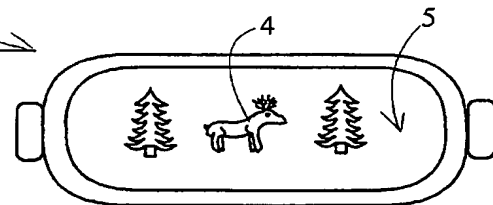


Fig. 45

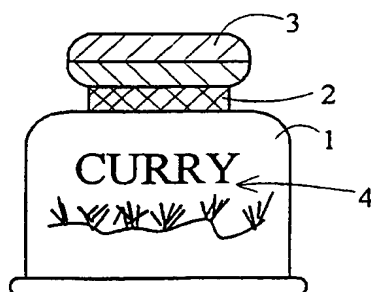


Fig. 46

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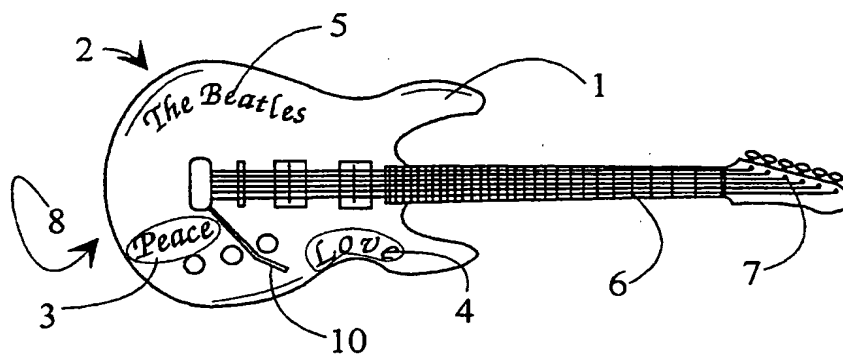


Fig. 47

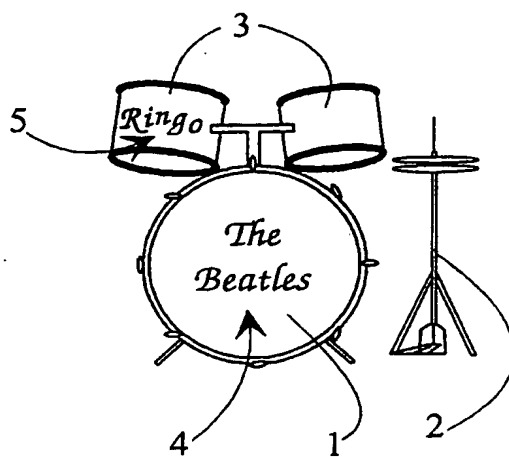


Fig. 48

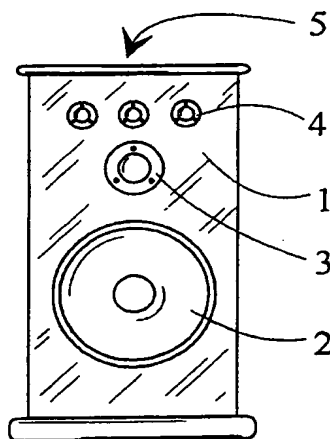


Fig. 49

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 00/00845

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9852144 A1 (METROLOGIC INSTRUMENTS, INC.), 19 November 1998 (19.11.98), the whole document --	1-4
A	US 5570292 A (ABRAHAM ET AL.), 29 October 1996 (29.10.96), the whole document --	1-4
A	EP 0801355 A2 (BAKER HUGHES INCORPORATED), 15 October 1997 (15.10.97), the whole document --	1-4
A	WO 9815908 A1 (CITIZEN WATCH CO., LTD.), 16 April 1998 (16.04.98), the whole document -- -----	1-4

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

8 January 2001

15 -01- 2001

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI00/00845

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-4
because they relate to subject matter not required to be searched by this Authority, namely:
.../...
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims: it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI00/00845

A method of doing business.

According to Rule 39 no search is required since the subject matter of the claimed invention concerns a method of doing business.

Despite this fact a search has been performed and thus a search report has been established.

INTERNATIONAL SEARCH REPORT
Information on patent family members

04/12/00

International application No.
PCT/FI 00/00845

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
WO	9852144	A1	19/11/98	AU	7570098 A	08/12/98
				CN	1255217 T	31/05/00
				EP	0983570 A	08/03/00
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US	5570292	A	29/10/96	CA	2142484 A	15/08/95

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				EP	1020807 A	19/07/00
